DOCUMENT RESUME

ED 183 930 CE 024 612

AUTHOR Schwartz, Henrietta; Olsen, George
TITLE Issues and Problems in the Development of a Five Year Sex Equity Plan for a State Education Agency.
INSTITUTION Roosevelt Univ., Chicago, Ill. Coll. of Education.
PUB DATE Apr 80
NOTE 73p.; Paper presented at the American Educational Research Association Annual Meeting (Boston, MA, April, 1980).

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Access to Education; Attitudes; *Equal Education; Equal Facilities; Expectation; Master Plans; Organizational Theories; *Policy Formation; Program Evaluation; Resource Allocation; *Sex Fairness; *State Programs; *Statewide Planning; Vocational Education

ABSTRACT

The process used to develop a five-year and annual Illinois state plan for sex equity in vocational education programs is described and analyzed. The appropriateness of theory and frameworks used to develop the plan are examined as well as the five-phase operational framework which emerged from the developmental process: expectations and attitudes, access, treatment, allocation of resources, and awareness and evaluation and program correction. Obstacles, tensions, and problems confronted in producing the plan are presented, along with the issues related to policy and analysis performed by an outside contractor for a state agency. (Authors/MEK)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED183930

Issues and Problems in the Development of a Five Year Sex Equity Plan for a State Education Agency

Henrietta Schwartz, Dean
College of Education
Roosevelt University

and

George Olson, Director
Research and Development Center
College of Education
Roosevelt University

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Henrietta Schwartz

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A Paper Prepared for the
American Educational Research Association
Annual Meeting
Boston, April, 1980

CE 024 612

Issues and Problems in the Development of a Five Year Sex Equity Plan for a State Education Agency

HENRIETTA SCHWARTZ and GEORGE OLSON

Roosevelt University

ABSTRACT

The following paper describes the process used to develop a Five Year and Annual State Plan for Sex Equity in a state education agency. The appropriateness of the theory and frameworks used to develop the plan are analyzed, as well as the five state operational framework which emerged from the developmental process: Expectations and Attitudes, Access, Treatment, Allocation of Resources, Awareness and Evaluation and Program Correction. Obstacles, tensions and problems confronted in producing the plan are presented as well as the issues related to policy research and analysis performed by an outside contractor for a state agency.

The purpose of this paper is to:

1. Describe the process used to develop the controversial Five Year and Annual State Plan for Sex Equity in a state education agency in Illinois.
2. Analyze the appropriateness of the theory and frameworks used to develop the plan, role expectation theory, the Delphi technique, and Five Phase McCage Model.
3. Describe the five state operational framework which emerged from the developmental process: Expectations and Attitudes, Access, Treatment, Allocation of Resources, Awareness, Evaluation and Program Correction.
4. Discuss the obstacles, tensions and problems confronted in getting the plan adopted by the state agency staff.
5. Trace the movement of the plan through the state agency to the status of funded programs with state agency responsibility for implementation.
6. Discuss the issues related to policy research and analysis done by an outside contractor for a state agency.

I. Introduction

In February, 1978, the Department of Adult, Vocational and Technical Education (DAVTE) of the Illinois Office of Education awarded to Roosevelt University's Research and Development Center a contract to develop a five year plan to achieve sex equity in vocational education programs in the state of Illinois. With the award began an elaborate set of procedures which culminated with the production of the desired plan. This report is devoted to a description and analysis of this process.

The report is divided into five sections. The first states the purposes of the project and how these were realized. It presents a brief overview of the procedures by which a private IHE outside contractor worked with a state agency and various client groups to develop a five year plan to achieve sex equity in Illinois. The second section summarizes the need for the plan and states the focal problems of this project. Federal and State mandates are discussed as they relate to the motivations for the request for the proposal by DAVTE. Section three is a literature review of the current status of sex equity in Illinois and presents the current status of sex equity in vocational education in Illinois as indicated and described by available documentation. Section four describes in detail the methodology of the project summarizing the eight major data gathering and analysis procedures used throughout the project. These events are presented chronologically for the most part and present an historical as well as informational picture of the project activities. Conclusions and recommendations comprise the final section of this technical report, and are reflections on the processes carried out in order to produce the final plan. Included in this final section also are recommendations for an evaluation scheme designed to augment and enhance the 3 phase approach now in use. Comments are also included concerning the problem faced in carrying out the above tasks. The five year plan in final form accompanies this technical report.

Initially, an assessment of the current status regarding the extent of efforts to eliminate sex role stereotyping and sex discrimination in vocational education was conducted. This involved a search of current literature and research related to these topics and a summary of findings and conclusions of these studies and reports. To gather additional information useful to assessing current status, four vocational education program centers were visited by a site team of Roosevelt staff to observe and interview both staff and clients. A survey instrument was constructed also to assess current status. It was designed for experts both statewise and nationally in order to obtain their best assessments of the status and what was needed to achieve sex equity in vocational education. This needs assessment of current status constituted the major initial efforts of the Roosevelt staff, and reports of the information obtained appear later in this report.

A second major objective was to produce a comprehensive set of long range goals for a five year plan to achieve sex equity in vocational education in Illinois. To generate this list, two separate conferences were held for experts in vocational education in Illinois who also would be knowledgeable of the problems and issues surrounding sex equity. At the first conference, held May 15, 1978, the major task was the formulation of lists of competencies needed by persons involved directly in or associated with the delivery of vocational education. The list generated from this first conference was summarized and distributed to DAVTE staff and a wider range of experts in vocational education both statewide and nationally for their evaluation. Responses to this information were used to formulate a tentative format for a plan, and to produce a partial listing of goals, objectives and activities which was shared in a progress report session with DAVTE staff on July 7, 1978. Comments and suggestions from this meeting concerning the progress that was made and the information itself was used to structure the second conference, held July 17, 1978. for the same group of experts. The focus for the second conference was different

from the first in that participants were to produce lists of appropriate objectives for the five year plan and suggest activities to satisfy these objectives.

With each successive meeting and conference, the information available from the needs assessment sources (literature review, etc.) as well as the information produced at each meeting was reevaluated and revised. This process of review and revision with consultation of experts constituted an application of the Delphi technique. This technique structured the procedures by which final decisions were made concerning what was to be included in the five year plan.

A third goal of the project was to design and develop a management and programmative plan which could be adapted for implementation by AVTE. After some negotiation with DAVTE staff shortly after award of the contract, it was decided that both management and evaluation of the achievement of sex equity could be best accomplished by adapting the evaluation format for vocational programs already in place and operating -- the 3 phase evaluation. In order to orient Roosevelt staff to the procedures and techniques used in the three phase evaluation, two Roosevelt R and D staff members became team members for the site evaluation of Steinmetz High School's vocational education program. Information obtained from this experience was shared with other Roosevelt staff, and this helped greatly to facilitate the adaptation of the five year plan to this scheme of assessment.

An organizing framework for the entire plan was provided by a model for program planning summarized in Ronald D. McCage's paper, "Developing a Comprehensive State Capacity for Program Improvement" was used. Five phases of operation were designated. Phase 1 is a development phase and constitutes the activities involved in the present project. Phase 2 is a research and planning segment, lasting one year, and includes such activities as the identification of resources and target populations, model programs in existence, feasibility studies and pilot programs for future inservice and preservice training of vocational educators. Phase 3, also one year in

duration, involves development and testing of inservice programs from which curriculum in use and inservice provided will be refined and evaluated. Phase 4 is a two year segment devoted to a comprehensive field testing effort of what has been developed. Previous plans and programs will have been refined to the point where they can be implemented and evaluated for the purpose of producing a finished program, one which can be disseminated with some confidence in its chances of success. The final phase is an evaluation and dissemination phase. It is proposed that a dissemination network throughout the state be developed, and that a final dissemination conference be held to culminate this final phase.

The above description of the phases comprises a framework which is to be imposed on the more specific goals, objectives and activities that are the substance of the five year plan. The framework and phase designation is implicit in the language and nature of the activities that are specified over the five years.

Before the commencement of a collaborative endeavor such as the one above, there was the necessity that members involved in the process communicate clearly and frankly with one another. Given the somewhat sensitive political and social nature of the topic of sex equity, it was doubly important that members of the DAVTE and Roosevelt staff agree on basic definitions of terms and concepts concerning sex equity. Each staff needed to become acquainted with the ways in which the topic of sex equity was viewed in a general and subtle fashion by persons involved in the project. To facilitate the exchange of accurate information among the staff members, both within and between staffs, a number of interviews were conducted with DAVTE personnal. (The results are summarized in Section 5 of this report.) From these discussions, a clearer understanding of the overall intentions of this project were obtained, and four important concepts were defined. These concepts are:

1. ACCESS. Is there equal access for boys and girls to quality services and programs, in guidance and counseling services, class assignments, career preparation

and training programs, curricular and extra-curricular activities, work study programs, etc.?

2. TREATMENT. Are males and females portrayed equitably and are students treated equally in class activities, student-teacher relationships, classroom climate, coeducational programming, counseling and guidance services, curriculum guides, distribution of physical facilities, vocational programs, etc.? Specifically, is the language sexist? What kind of role models are presented and implemented?

3. ALLOCATION OF RESOURCES. How are faculty and students assigned to classes? Are class schedules designed to accommodate the special needs of males and females? Are support services available to permit working mothers to receive vocational education (e.g., day care facilities, baby-sitting services)? What are the recruitment practices? Are fiscal resources equitably distributed to support programs promoting sex equity?

4. AWARENESS, EVALUATION, AND PROGRAM CORRECTION. Has the agency or school collected data indicating the level of awareness of the issue of sex equity among the educational staff? Have the data been used to institute programs to raise levels of awareness or remediate biases? Have attempts been made to articulate equitable programs among the various levels and components of the vocational education agency program in the system? Have employment data (in terms of trends, forecasts, and projections) been collected and distributed to staff and students? Is sex equity implemented in affirmative action programs, tolerated benignly, neglected, or actively discouraged?

From a synthesis of the data gathered from the needs assessment activities and the discussions with DAVTE personnel, the phrase, Progress Beyond Access, was adopted to describe the process of achieving sex equity in vocational education. It represents the spirit as well as the meaning of the five year proposed plan. It implies clearly that equal access for males and females in vocational education programs is not in itself sufficient to achieve sex equity. A plan that will have some impact on vocation-

al programs in terms of sex equity must advocate and embody action that goes beyond access. The activities that are included in the five year plan have the purpose of fulfilling the meaning of these words.

II. Need and Problem

Sociologists, anthropologists, and economists have indicated that the family and work systems in the United States are caught up in an experience of social change.[1,2] Women are assuming increasingly large roles in the labor force as indicated by the following statistics: (1) In 1975, in only 34 out of every 100 husband-wife families, was the husband the sole breadwinner, (2) 37% of married women with preschool children worked outside their home in 1976, as compared to only 13% of such women in 1948, and (3) 50% of mothers of school-age children worked outside their home at least part-time. These figures can be expected to increase.[3] Women are being drawn into the labor force today by powerful demographic, economic, and social forces as well as far reaching attitudinal changes. The large-scale movement of women into the work force raises the possibilities of creating an improved society in the United States. Within the dynamics of this movement of social change, the perceptions of the American people are also changing. Traditional attitudes and values which supported the perceptual stereotypes of the American persons have begun to be re-examined by those who are concerned with preserving the most desirable traditions in the American way of life. One of these traditions focuses on the question of equity: political, economic, and educational. Within the sphere of social concerns of today, there exists the specific problem of equity for women.

---

[1]Margaret Mead. Statement before the United States Senate Subcommittee on Children and Youth in American Families: Trends and Pressures, Washington, D.C.: U.S. Government Printing Office, 1974, 121-133.

[2]Urie Bronfenbrenner. Ibid., 134-180.

[3]Advisory Committee on Child Development. Towards a national policy for children and families. Washington, D.C.: National Academy of Sciences, 1976.

A review and synthesis of research on women in the world of work[1] indicates that not only are women's salaries generally lower than men's for comparable types of work, but there exists an "underutilization" of women's abilities and educational achievement due to discriminatory practices. Studies such as that conducted by the U.S. Civil Service Commission in 1967 and 1970 reported that women are achieving only occasional breakthroughs outside the traditional "women's fields." Entry of a significant number of women into executive-management positions is not indicated. In Illinois, women are underrepresented in positions of educational administration.[2] Occupational and vocational training and choices for women are limited.

Doing nothing and going no place not only describes the life of women who become housewives and mothers without clear personal goals for the future, but also the occupational life of most women in the labor force. As we are all aware, the occupational spread of women is bottom heavy. As service workers, women cluster as the lowest paid domestic house cleaners. Men are building superintendents or porters--lowly jobs, but granted more status than the housemaid. Women are school teachers, but men become primary school principals; women are secretaries and gal Fridays, but men are junior account executives.[3] Although the Bureau of Labor Statistics 1976-77 edition of the Occupational Outlook Handbook introduced non-sexist job titles, research suggests that the problem of discrimination against women in the world of work continues to exist within the context of the American social culture.

Programs to prepare women for employment have been designed and implemented in

---

[1]M.B. Kievet. Review and Synthesis of Research on Women in the World of Work. ERIC Clearinghouse on Vocational and Technical Education. (The Center for Vocational and Technical Education, Ohio State University) March, 1972, pp. 26-29.

[2]S. Richardson. Women are underrepresented in educational administration. Illinois Education News, November, 1977, p. 3.

[3]Cynthia Fuchs Epstein. Structuring success for women. Journal of the National Association for Women Deans and Counselors, XXXVII, Fall 1973, pp. 34-41.

junior high and secondary schools, post-secondary institutions, private firms, community agencies, and in federally funded programs. However, vocational choices for young women have not increased in number or type within the last several years.[1] Young women perceive a narrow range of possibilities for themselves for a number of reasons such as their fear of venturing into a man's world,[2] or their limited exposure to professional models who are female.[3] The legislation affording equal occupational opportunity to women is on the books, but the normative stereotype for the female as a worker has inhibited the implementation of the law, thus resulting in cultural lag.

The addition of a wife's income has assisted middle-income families in fighting inflation and improving their living standard. Those intact families with only one income earner and single men or women with children have had comparatively more problems maintaining their financial position. Generally, women's earnings are three-fifths those of men for full-time work; overall, their median earned income in 1975 was only two-fifths that of men. This is, to some degree, because of their predominance in part-time work. In addition, the earning capacity of a female head of household is further limited because her educational attainment and level of skill development tends to be rather low.[4]

Our educational system may be partly responsible for these phenomena in that it reinforces traditional sex-role stereotypes into which women are guided, i.e., the conventional occupational roles as teacher, secretary, librarian, nurse, housewife, etc. Occupational choices of junior and senior high school girls are limited in po-

---

[1]Kievet, p. 54.

[2]F.J. Karman, "Women: Personal and Environmental Factors in Career Choice." Paper presented at AERA (New Orleans, February, 1973), ERIC Clearinghouse.

[3]M.T. Notman and C.C. Nadelson, "Medicine: A Career Conflict for Women," American Journal of Psychiatry, 1973 (Oct.), Vol. 130 (10), pp. 1123-1127.

[4]Alan Pifer. Women Working: Toward a New Society. (New York: Carnegie Corporation, 1976 Annual Report).

tential numbers and types by the perceptual stereotypes of teachers, counselors, and significant others in the culture of the school. Particularly in the schools, the adult personnel who interact with young women reflect their own social and cultural biases in preparing students for vocational selection, thus limiting the range of choice and training for the junior and senior high school girl.

Historically, sex discrimination at the elementary and secondary levels has been an accepted mode of behavior. Dual pay schedules for men and women public school teachers have not been uncommon. Until World War II, married and pregnant women were often disqualified from teaching. Research has documented the finding that boys and girls are often subject to differential treatment in schools.[1] Former Commissioner Marland's Task Force on the Impact of Office of Education Programs on Women describes the situation:

> With respect to collecting information on women, OE has not fulfilled its oldest mandate. Despite growing concern about sex discrimination, information comparing the status of men and women in education is still limited. Few national studies have been collected to supplement piecemeal information on sex discrimination that has come to light in recent years. Accurate information on women in education is essential to education policymakers and interested citizens in determining the extent and degree of sex discrimination supported by educational institutions. In turn, agency officials will find it difficult to identify and overcome sex discrmination in their own programs without accurate information on their impact on women.[2]

Recently, some promising improvement in achieving sex equity has come from efforts of working women's organizations and other women's interest groups in exerting pressure on government and employers to implement equal employment and equal pay laws and to remedy the effects of past inequities through affirmative action. The entry barriers to many traditionally sex-related jobs have been lifted, allowing a

---

[1]Jacqueline Parker Clement. Sex Bias in School Leadership. (Evanston, Illinois: Integrated Education Associates, 1975).

[2]Report on the Commissioner's Task Force on the Impact of Office of Education Programs on Women, "A Look at Women in Education: Issues and Answers for HEW," (United States Department of Health, Education, and Welfare, 1972), p. 58.

certain number of women to enter male-dominated occupations. Since 1960, the rate of increase of women in the skilled crafts has exceeded that of men. Greatest advances have been achieved in the professions by highly educated women.[1]

Awareness of the crucial role of education in preparing women for the world of work has led to extensive legislation promoting equal educational opportunity. Beginning in 1977, federal legislation required educational institutions to initiate programs to overcome sex discrimination and sex stereotyping in vocational education programs and to make all courses accessible to males and females (Public Law 94-482). Illinois' Comprehensive Plan for Program Improvement[2] authorizes DAVTE to utilize funds for the following purposes: (a) research projects on ways to overcome sex bias and sex stereotyping in vocational education programs, (b) development of curriculum materials free of sex stereotyping, (c) development of criteria for use in determining whether curriculum materials are free from sex stereotyping, and (d) training to acquaint guidance counselors, administrators, and teachers with ways of (1) effectively overcoming sex bias and (2) assisting girls and women in selecting careers.

III. Implementing Sex Equity in Vocational Education: A Review of Selected Literature[3]

Sex-typing in occupations is pervasive. While sex-typing limits choices for both men and women, it is particularly constraining for women because so few occupations are perceived as being appropriate for women. Most of the 37 million women working during 1976 were occupationally segregated; 50% of women worked in just 21 occupations, whereas 50% of men worked in 65 occupations. (Farmer and Backer, 1977).

Not only are women's jobs fewer in kind, but they are lower in status and income than traditionally male occupations (See Table 1). In 1977, women accounted for

---

[1] Pifer, p. 7.

[2] Ronald D. McCage. Developing a Comprehensive State Capacity for Program Improvement.

[3] This literature review was written by Sharon Tucker Schreiber and Eliot S. Asser.

41% of the total work force; 56.9% of all women 18-64 were working (Women's Bureau, 1978). Nine out of ten women will work sometime during their lives and nearly 60% of them will work out of economic necessity (Women Employed, 1977). Yet in 1974, women earned only 57.2% of what men earned, down from 63.9% of men's earnings in 1955. In 1974, 82% of the women earned less than $10,000, while only 38% of the men earned below that level (Women's Bureau, 1976).

Table 1
Comparison of Distribution of Annual Income by Sex, 1974

	Females	Males
less than $3000	8.4%	4.6%
$3000-$4999	17.6%	4.7%
$5000-$6999	27.0%	9.0%
$7000-$9999	28.8%	19.4%
$10000-$14999	14.7%	33.3%
more than $15000	3.5%	28.9%

Source: Women's Bureau, 1976, p. 7.

Further figures refute the rationalization that women's wages, representing second incomes, need not be equal to those of men. Fifty-six percent of working women are single, divorced, separated, or have husbands who earn less than $7000 annually (Women's Bureau, 1977). Moreover, only 50% of divorces lead to alimony judgements and the median alimony payment is $1300 annually (Rider, 1977). Secretary of Commerce Kreps has observed (1973) that the working wife is a permanent product of our technology, not a temporary situation. This shifts the emphasis from questioning whether women will continue to work to planning for what their work will be.

Much of the income gap can be attributed to the fact that women are primarily employed in clerical and low-paying service jobs. The potential remedy to the problem is to prepare non-professionally oriented women for traditionally male occupations such as mechanic, carpenter, and plumber, which are better paid than clerical and service occupations. The solution may not be quite

that simple, however, since women employed as craft and kindred workers in 1974 earned 54% of what men in those crafts earned (Women's Bureau, 1976).

In 1978, there are laws to protect women from job and educational discrimination. Particularly in elementary and secondary education, the letter of the law is for the most part obeyed. It would be surprising to see a school administrator bar the entrance to a shop class that a girl wanted to attend. Nevertheless, subtle psychological pressures are brought to bear to keep males and females in sex stereotyped roles. The educational system has moved from a set of both formal and informal sex roles to a set of informal sex roles only (Holter, 1975). The informal role expectations are internalized so that negative sanctions and overt discrimination are unnecessary to keep people in their expected roles.

The theory most helpful in explaining the dynamics and durability of sex-typed behavior is role theory. A role is a set of expectations about the rights and duties and the expected behavior associated with a position in a social structure. A role does not exist in isolation; roles exist in complementary sets. There are no daughters without mothers, no students without teachers. A role partner is the person occupying a complementary role. It is the interaction between the role partner and the role incumbent together which determines the rights and duties and appropriate behavior for each of their roles. Goode (1960) theorized that three factors were most important in determining whether a person would enact a role according to expectations. A person may desire to accept a role because (1) it is intrinsically gratifying or consistent with his internalized values, (2) it is accompanied by rewards or punishments, or (3) the approval of the role partner(s) may be important.

It is likely that all three of the above factors operate to keep men and women in sex stereotyped occupations. They have internalized values about the appropriateness of certain activities for each sex; they may be punished with

exclusion from jobs and social groups for failure to act in traditional roles; and they are likely to receive more approval for acting in traditional roles.

The degree of consensus surrounding traditional sex roles in occupations is an important factor in determining role innovations. For example, when almost everyone believes that women should not be plumbers and men should not be secretaries, it is much more difficult to innovate these new role behaviors. Roles are, however, constantly renegotiated. As individuals strive to meet their needs, they try out new behaviors to see if their role partners will accept those behaviors as appropriate. Therefore, the potential for change is always there, tempered by existing role expectations which support the status quo.

Sex roles are the most basic of all roles because gender is obvious from birth. Children are socialized very early into "appropriate" sex-typed behavior, including appropriate occupations. Their career preparation and ultimate career choices are enactments of role appropriate behavior. The validity of the roles is reinforced at school by teacher and counselor expectations. However, programs have begun to expand women's roles, to open up new career options for them, and to get them involved in non-traditional vocational training.

What follows is a review of the literature of occupational choice, occupational socialization, and programs of non-traditional vocational training. Only studies that use systematic, empirical analyses of programs or research data have been included.

Occupational Choice

The first task in moving toward sex equity in vocational education is to understand the kinds of occupations that girls and boys actually choose when given a chance to express freely their occupational preferences. The data on

occupational choice are absolutely clear. In study after study, in all areas of the country, it has been consistently shown that girls choose from a very narrow range of possibilities and that most of them choose to be secretaries, teachers, and nurses.

A study of junior high and high school girls in West Virginia (Rand and Miller, 1972) found that while most girls planned to work, they preferred sex stereotyped occupations. Berman (1972) analyzed the occupational choices mentioned by New York City senior high school girls in their senior yearbook. He found that over 50% of the total group preferred to be either a secretary, nurse, or teacher, with secretary leading the field at 20.5%. A total of 49 occupations were mentioned, but only 14 occupations were mentioned by 10 or more girls. In a study of 149 women enrolled in office occupations curricula at an Oregon community college, Peterson (1976) found that most of the women felt being a homemaker was desirable, but that becoming a business education teacher or university professor was undesirable.

A number of studies are particularly relevant to vocational education because they investigated students' feelings about entering a trade. Shinar (1975) asked male and female college students to rate the masculinity or femininity of 129 occupations. Both men and women rated the trades at the extreme end of masculinity. Based on Shinar's data, it is unlikely that either men or women perceive the trades as desirable or appropriate for women.

In a study of occupational prestige and appropriateness (Medvene and Collins, 1974), four groups of women were questioned. The groups were (1) a university women's caucus, (2) university students, (3) secretaries and clerks, and (4) unemployed women. While all groups rated the high prestige occupations as appropriate for women, the secretaries and unemployed women were much less likely to rate the low and middle prestige occupations as appropriate for

women. These middle prestige jobs include skilled trades. The authors suggest that manual labor may be the factor which leads to the perception that the trades are inappropriate for women. Secretaries are presumably the best candidates for choosing the trades as alternatives to their present careers because the educational investment is similar. They did not, however, perceive the middle status jobs as appropriate for women.

Slocum and Bowles (1968) asked high school students to indicate their most preferred occupations and also asked them to rate a number of jobs according to whether they liked or disliked them. They found that both boys and girls overwhelmingly chose professions as their first choice. When specifically asked to rate four trades--auto mechanic, electrician, factory foreman, or carpenter--between 29% and 44% of the boys said they would like these occupations while 34% to 41% said they would not. The girls, however, had a dramatically different response. Only 2% to 5% said they would like one of these jobs, while 81% to 83% said they would dislike them. Neither boys nors girls wanted to be plumbers.

Lerner, Bergstrom, and Champagne (1976) designed a demonstration project to increase the number of females in traditionally male-dominated vocational programs. In a pretest of girls from junior high schools feeding into the demonstration high school, most of the girls said they thought women should work, but did not feel that careers such as auto mechanics and plumbing were appropriate for women, nor did they choose non-traditional careers for themselves. The girls had little information on the job market and even less about careers.

Prediger, Roth, and Noeth (1973) studied a national sample of 32,000 junior high and high school boys and girls. Over half the 11th grade girls chose jobs which fell into three categories: clerical and secretarial, educa-

tion and social service, and nursing and human care. Only 7% of the 11th grade boys chose these categories. On the other hand, half the 11th grade boys chose technology and trade clusters, while only 7% of the girls did.

There is little doubt from the data available that girls would rather be secretaries than mechanics and boys would rather be mechanics than secretaries. What is most disconcerting is that 5-year-olds have already made sex-stereotyped occupational choices. Kirchner and Voncracek (1973) studies boys and girls who were 3, 4, and 5-years old. These children were asked what they wanted to be when they grew up. Of those who responded with an occupation, boys responded with a wider range of jobs than girls and preferred to be doctors, professional athletes, policemen, or firemen. Girls overwhelmingly chose to be teachers and nurses, although there were a considerable number of girls who chose non-traditional occupations.

Looft (1971) asked girls and boys in the first and second grades what they would really be when they grew up. The boys named 18 occupations and preferred to be football players and policemen. The girls named only 8 occupations and preferred to be nurses or teachers.

In yet another study of children, Schlossberg and Goodman (1972) asked children in grades K-6 what they wanted to be when they grew up. They found that 83% of the girls and 97% of the boys chose jobs with traditional sex stereotypes. Furthermore, they found no increase in the amount of sex stereotyping in job preference from grades K-6.

There is evidence, however, of a discrepancy between real occupational aspirations and ideal aspirations. Studies by Lerner, Vincent, and Benson (1976) and by Burlin (1976) found that both young girls and high school girls choose traditionally female occupations for themselves, but see the ideal as being more egalitarian.

Overall, women aspire to be secretaries, nurses, and teachers, and they develop those aspirations at a very early age. They see some non-traditional occupations as appropriate, perhaps even ideal for women, but do not choose them for themselves. Perhaps the egalitarian norms that have been gaining prominence over the last several years are making their way into the realm of intellectual possibilities for girls. Girls are not, however, developing a commitment to enact those non-traditional roles. Moreover, they express no interest of any kind in the trades.

Boys also demonstrated an overwhelming tendency to focus on and pursue traditional roles. Young boys aspired to traditionally male-dominated occupations. The Prediger, Roth, and Noeth study (1973) indicates that this orientation persists at the eleventh grade level. One potential explanation might be that by eleventh grade, males have evaluated traditionally female occupations as promising lower salaries and possessing less status and power and, therefore, avoid them. An alternative explanation might be that high school age boys perceive a social stigma attached to traditionally female occupations and avoid them for that reason.

Occupational Socialization

A number of studies have looked at the effects of different socializing influences on occupational preference. Some of the important work on occupational socialization has been done on college students or college graduates. Even though this paper focuses on people who choose vocational rather than college training, studies of college students will be reported here--in addition to studies of non-college students--although their generalizability to a population of non-college students may be limited.

Parents

Non-College Students

Kane, Frazer, and Dee (1976) did a national study of women in area vocational-technical schools, comparing women in traditional and non-traditional programs. They report that mothers had the most influence on non-traditionals, followed by husbands and fathers. Pen and Gabriel (1976), studying 17-19-year-old women, found that parents encouraged traditional roles with a variety of rewards and responded negatively to non-traditional decisions. These young women also reported parents as the primary influence on their career choices. Esslinger (1976) discovered the same pattern in a study of twelfth grade girls in Illinois. These girls reported mothers as most influential in their educational preferences and choices. They said that the four most helpful sources of occupational information were people employed in an occupation, fathers, mothers, and friends. These studies illustrate the preeminent role mothers play in socializing their daughters. The evidence suggests that while mothers can influence their daughters to pursue non-traditional careers, they more often respond negatively to non-traditional roles and positively to traditional career choices.

College Students

Several studies of college women's career choice found the choice related to mothers' employment. For example, Tangri (1972) classified college seniors as role innovators, moderates, and traditionals. She found the only background variables which predicted role innovation were mothers' being employed outside the home and mothers' being employed in a non-traditional field. Examining relationships with parents as a factor in occupational choice she found that being identified with father did not predict role innovation. Feel-

ing close to father and disagreeing with mother were both negatively correlated with role innovation, while being close to mother and disagreeing with father were positively correlated with role innovation.

After a brief review of the literature, Altman and Grossman (1977) concluded that studies have shown a positive relationship between college women's career commitment and mothers' careers. Their own study of 51 senior women yielded mixed findings. On one scale of career orientation, daughters of working, career-oriented mothers were more career-oriented, while on another scale they were not. They also found that, regardless of maternal career, career-oriented daughters show broader sex role conceptions.

Roe and Seligman (1964) presented an outline of a theory for predicting occupational choice from parental attitudes toward the child. Their basic argument, derived from Roe's (1956) earlier work, was that children develop motivations or job interests based on early patterns of need satisfaction or frustration. Out of these early patterns develop two kinds of occupational interests: Toward Persons and Not Toward Persons. Hypothetically, warm, accepting parents should develop Toward Persons children, while cold, demanding parents should produce Not Toward Persons children. The Toward Persons orientation was predicted to lead to the typically female jobs of service occupations, the arts, etc., while a Not Toward Persons orientation was predicted to lead to technologies and science. Their own study, as well as those of Hagen (1960), Utton (1960), and Switzer, Grigg, Miller, and Young (1962), failed to support the theory. Occupational choice was not predicted from parental attitudes. Testing the same theory in a slightly different way, Kriger (1972) found that perceived parental control differentiated homemakers from employed women, but did not differentiate women employed in traditional occupations from those employed in non-traditional fields.

The findings related to Roe's theory are very important, because they demonstrate that global personality variables which may derive from childhood experiences are not most salient in occupational choice. The findings therefore provide support for a role-theory conceptualization in which expectations specific to occupational choice are formulated.

Peers

Surprisingly little research has been done on the influence of peers on occupational choice. The study of 17-19 year old women by Penn and Gabriel (1976) found that peers were second most influential, ranking just behind parents, but ahead of any school personnel. Hawley (1972) found significant differences between what non-traditional college women thought their boyfriends or husbands expected of them and what traditional students thought their boyfriends or husbands expected of them.

Television

No research was found that directly examined the effects of television on occupational choice. However, the potential influence of TV seems so great that two studies of the effects of television on sex-stereotyping are reported. First, a study by Frueh and McGhee (1975) divided boys and girls in grades K, 2, 4, and 6 into high TV watchers and low TV watchers. The high TV watchers were more highly identified with traditional sex roles, and the findings increased with age. Sternghanz and Serbin (1974) analyzed 10 programs popular with young children during 1971-72. They found that males in these programs more often than females were aggressive and constructive and were more often rewarded. Females were more often punished for high levels of activity.

Clearly, television needs to be considered more closely as an occupational socializing influence. When young people see only sex-stereotyped occupations,

dramatically and appealingly presented, for 25 hours a week, the impact is likely to be great.

School Influence

Books

Many studies have examined the sex-stereotyping of school books, particularly for elementary students. From her review of the literature, Karr (1976) concluded that females were portrayed in traditional occupational roles, especially homemaking, and were portrayed as passive and received less frequent mention in the readers. Steiger (1974) reviewed nine textbooks and curriculum guides for courses in technical occupations. She found that teachers and workers were all referred to as "he" and pictures showed only boys and men in technical occupations.

It is probable that these materials do not teach children appropriate role behavior, but rather reinforce the role stereotypes learned at an early age. Schlossberg and Goodman (1972), as reported previously, found the stereotypes already developed in kindergarten and found no increase with age. However, these books clearly give the message that the role expectations developed early in life are still appropriate in 6th grade and in high school.

Vocational Materials

The Illinois Council on Economic Education (1977) recently examined five experimental career orientation manuals developed under contracts with the Illinois Office of Education. The five occupational areas were applied biological and agricultural occupations, industrial occupations, personal and public service occupations, business, marketing, and management occupations, and health occupations. While commending the manuals for their use of non-sexist language, equal pictorial representation of men and women, and reliance on resources external to the school to introduce occupational alternatives, the

Council also discovered several more subtle instances of sex bias. In two instances, for example, actions by women holding responsible positions in an organization were portrayed as examples of mismanagement. There were no similar examples with men. In another case problem, a woman is portrayed in the role of an irresponsible employee in contrast to a conscientious male employee.

Teachers and Counselors

Students report educational personnel of any kind as being less influential in occupational choice than parents (Kane, Frazer, and Dee, 1976; Penn and Gabriel, 1976; Esslinger, 1976). They also report that teachers are more influential than counselors (Kane, Frazer, and Dee, 1976; Esslinger, 1976).

As role partners to students, teachers and counselors participate in defining appropriate role behavior of their students by communicating their attitudes and expectations to the students. Several studies have examined teacher and counselor attitudes toward women's roles.

Dittman (1976) gave Bem's Sex Role Inventory to vocational teachers, administrators, and counselors in North Dakota. She found that everyone held stereotyped views of men and women, but they described males and females generally as more sex-typed than they believed themselves to be.

Thomas and Stewart (1971) presented male and female counselors with tapes of girls talking about making traditional and non-traditional career choices. They found that counselors, regardless of sex, rated traditional goals as more appropriate than non-traditional goals. Both male and female counselors rated female clients with non-traditional career goals as being more in need of counseling than those with traditional goals.

Bingham and House (1973) attempted to assess the knowledge of New Jersey guidance counselors in areas related to women and work. They found the coun-

selors informed about many aspects of women's employment, but uninformed about the discrepancy between men's and women's incomes and the probability of advancement. Counselors were less accurately informed about: (1) the occupational alternatives needed by women, (2) the ability of women to be both homemaker and worker, (3) whether women are discriminated against, (4) the number of jobs that cannot be performed by both women and men, (5) the length of time women are in the work force, and (6) that many companies do not make fringe benefits available to women.

A fair amount of attention has been given to the problem of sex biasing in interest inventories (e.g., Diamond, 1975). Interest inventories may serve to legitimize the counselor's sex stereotypes and may be tools to reinforce a young person's own sex stereotyped role expectations. Interest inventories are based on two rationales (Cole and Hansen, 1975). The first is that people in the same occupation have the same interests. Therefore, if the person taking the test has the same interests as people who are already in an occupation the inventory will show the person as having a high probability of being satisfied with that occupation.

Second, if people like activities similar to the activities required by a job, then they will like the job activities and will be satisfied with that job. As Cole and Hansen point out, the obvious problem with such interest inventories is that they are based on past socialization and serve to reinforce the status quo. The technical aspects of testing are beyond the scope of this paper. It is important to point out, though, that at least two sex-fair tests have been devised. One is the UNIACT-IV which is a revision of the ACT-IV (Prediger and Hanson, 1976). A second is the Non-Sexist Vocational Card Sort (Dewey, 1974).

Looking specifically at teachers, Nies (1978) studied Illinois area vocational center teachers' perceptions of the impact of Title IX on various aspects of vocational education. She found that teachers of personal and public services, who were mostly women, were most positive about the desirability of Title IX. Agriculture and industrial arts teachers, who were almost all men, were least positive about the desirable effects of Title IX on role modeling, admissions policies, and sexist language. Business teachers, who were primarily women, were least positive about its effects on support services and the benefits that males and females would derive from it.

All the available data indicate that teachers and counselors still support traditional sex roles. Of most interest is Nie's finding that Illinois agriculture and industrial arts teachers do not see sex equity laws as having a positive effect on the role development of students. Consequently, some resistance may be encountered as programs are evolved to bring women into traditionally male vocational training. This finding takes on greater weight in light of the previously reported finding that teachers are the most important school influence on whether or not a young women chooses a non-traditional occupation.

Summing up the findings on occupational socialization, parents, and particularly mothers, are perceived as having the most influence over the daughter's choice of a traditional or non-traditional career. There is some data to indicate that peers are second most influential, while teachers rank third, and counselors fourth. The overwhelming direction of that socialization is to push daughters toward traditional careers. The outcome is that most girls want to be secretaries, nurses, and teachers. Recent research on socialization influences has focused on girls to the exclusion of boys. There is no

theoretical reason, however, why the influence order should be different for the sexes.

To offset the traditional socialization girls and boys are receiving, career education programs are springing up around the country. These programs attempt to set up alternative role expectations for children and youth. For example, Project HEAR (1976) in New Jersey developed a program to widen alternatives and increase self awareness for students in grades 4-12. They report the following results: (1) elementary students who took the course showed a significant increase in the number of occupations perceived as appropriate for both sexes. They also were significantly more likely than a control group to choose non-traditional occupations. (2) Middle school students who took the course had significantly more occupational information than controls. (3) High school students who took the course significantly increased the number of times they chose occupations consistent with their preferences.

Vinzeni (1977) reports that a program of discussion of occupational sex stereotypes resulted in 6th grade students significantly widening their view of role appropriate behavior. A similar program with 6th grade girls done by Harris (1974) reports an increase in the number of different kinds of career choices for the girls involved in the program.

The results from all these career education projects are very encouraging, indicating that occupational sex stereotyping can be reduced by setting up new role expectations for students. Even though research shows parents to be most influential in determining occupational choice, these programs have been effective in the school setting.

Non-Traditional Vocational Training

Several programs have been developed to introduce and encourage women to prepare for and enter traditionally male-dominated vocations; none of these projects, however, reports comparable programs to open traditionally female occupations to males.

Very few studies have reported empirical assessments of women in non-traditional vocational training programs. One of the most intensive programs that has been assessed is Project EVE in Houston, Texas (Lerner, Bergstrom, and Champagne, 1976). The program intervention was (1) to recruit actively high school girls into male-dominated vocational training programs through classroom media presentations, bulletin boards, colorful and exciting career fair booths, and television; (2) to meet with girls in the non-traditional program to discuss problems and offer support; and (3) to observe classes and meet with the teachers of non-traditional courses. The recruitment process doubled the number of girls in the traditionally male vocational classes. Furthermore, participation led to (1) positive attitude changes regarding taking jobs in non-traditional areas, (2) acceptance by staff of women in these areas, and (3) a decline in staff discouragement of non-traditional choices.

Beach (1977) reviewed the North Carolina New Pioneers Project. That project led to increased enrollment by both males and females in non-traditional areas as a result of recruiting, revised course descriptions and a focus on field work. During a data collection phase, a statewide assessment of the status of sex equity in vocational education was made. Several factors were analyzed in ten pilot school systems distributed throughout the state (Smith, 1976). Sex biasing and sex discrimination was evaluated in information processes, classroom atmosphere, methods of job assignment, the content of course

descriptions and program brochures, and pre-registration methods. In addition, a program of training institute focusing on sex bias and sex discrimination was designed and implemented in 46 school systems throughout the state. During the 20 months following July, 1974 significant changes in the distribution of boys and girls in vocational education programs occurred. Significantly higher numbers of girls enrolled in agriculture, trades, industry, farm production, bricklaying, and carpentry. Similarly, home economics, foods and nourishment, and housing and furnishing saw significant increases in enrollments by boys.

Lewis and Kaltreider (1976) searched the country for schools that enrolled five or more girls in non-traditional vocational classes. Only 16 were found, 11 of which were used in their study. Students who enrolled in non-traditional courses generally had a positive experience. They felt accepted, were interested, and were satisfied. However, they also believed they lacked background and believed their teachers were neutral toward their participation rather than encouraging. Looking at later employment, women who had taken non-traditional courses in high school were more likely to have professional, technical, or semi-skilled jobs rather than clerical or service jobs. Males who had been in non-traditional programs were more likely to hold clerical, sales, and service jobs rather than semi-skilled or farm jobs. Very few respondents reported employer prejudice. Unfortunately, only one-third found jobs related to their skills. Three-fourths of those who did were satisfied with their jobs.

Finally, Kane, et. al., (1976) studied a national sample of women in traditional and non-traditional occupations. Among the non-traditional students, 54% believed their high schools had not prepared them for post-secondary vocational education. Two-thirds of these students had problems in adjustment. The two major areas of adjustment problems were (1) male students having dif-

ficulty adjusting to the women enrolled, and (2) males being better prepared.

Drawing conclusions from the small amount of data on women in non-traditional programs is difficult. It is clear that very few people are now in non-traditional programs. Based on Project EVE's experience, it will take intensive and dedicated recruiting efforts to change enrollment patterns. Although women are reported to have some adjustment problems in non-traditional programs, they do fairly well, and adjust quite well when given the kind of support that EVE gave.

Illinois Vocational Education

Illinois has over 716,000 students enrolled in vocational education programs, 74% of whom are at the secondary level. An initial scan of Table 2 indicates that men and women appear to be represented equally, 53% of the students being men, 47% women. Closer examination, however, reveals a pattern of placement or selection in vocational programs consistent with the literature. Women dominate the fields of Health Care (84% women), Consumer Services and Homemaking (82%), Occupational Preparation (85%), and Office Skills (70%). Men are the majority of students in Agricultural programs (83%), Technical programs (94%), and programs designed to train for Trades and Industry (90%). Even in a field like Distributive Education where the distribution of men and women approaches equality, one finds sex-typing. Men, for example, predominate in the areas of automotives (94%), hardware and building materials (85%), industrial marketing (69%), insurance (74%), and wholesale trading (82%). Women are overrepresented in food services (73%), home furnishings (64%), apparel and accessories (64%), and recreation and tourism (57%). Table 3 reveals similar distributions for the staff responsible for these programs.

Barriers to changing these distributions arise at several points. Parental and personal attitudes and habits may continue to channel children into traditionally male and female occupations. Selection biases by employers and guidance personnel, and equally pervasive characterizations by teachers and the media will exacerbate the situation. Finally, structural components of occupations may inhibit changed roles. For example, occupational projections are critical pieces of information that must be examined in encouraging women (and men) to enroll in non-traditional occupations. The forecast by the Department of Labor in the Occupational Outlook Handbook (1976) projects that professional

Table 2*

Enrollments in Illinois Vocational Education Programs (FY1977)

	Males	Females	Total
Agriculture	28666 83%	5723 17%	34389
Distribution (Merchandising)	22437 52%	20672 48%	43109
Health	5104 16%	26554 84%	31658
Consumer & Homemaking	5581 18%	26995 82%	32576
Occupational Preparation (Child Development and Home Economics)	11098 15%	61243 85%	72341
Office Skills	72183 30%	169451 70%	241634
Technical	15129 94%	940 6%	16069
Trades and Industry	217357 90%	23970 10%	241327
Special Programs	1635 55%	1344 45%	2979
TOTAL	379190 53%	336892 47%	716082

Table 3*

Sex Distribution of Staff Members by Occupational Area

Area	Males	%	Females	%	Total
Business, Marketing & Management	464	61	292	39	756
Agriculture	154	95	8	5	162
Industrial	641	99	9	1	650
Personal and Public Service	124	26	352	74	476
Health	52	20	210	80	262
TOTAL	1435	62	871	38	2306

*Source: Illinois Council on Economic Education, 1977, Appendix C

and clerical occupations will be the fastest growing fields between 1974-1985, each growing by about 30%. Sales positions, crafts, laborers and service workers will grow at much slower rates, and farm employment will decline by perhaps 40%. Educators must move with caution to insure that thousands of young people are not trained for occupations which will, by the time of their employment, be oversupplied.

Each of these barriers may also represent key points at which innovations may be introduced. Some evidence of movement toward change in Illinois was found in the survey responses of 38 Coordinators of Career and Vocational Education programs (Illinois Council on Economic Education, 1977). In their responses, the Coordinators indicated their emphasis is currently on counseling and open enrollment. One-third had held inservice sex bias or awareness workshops. One-fourth had studied the extent to which sex bias was present in their educational materials. A little more than one-half had looked at sex distribution in their enrollment figures and had evaluated the extent to which scheduling hindered or facilitated open enrollment; fewer than one-half, however, had discussed with their students the kinds of sex discrimination that exist and the legal avenues that are open to victims of discrimination.

Conclusions and Implications

From the literature review, it is apparent that there are differences between males and females in attitudes, expectations, and preferences for occupations and that these differences arise at an early age. Counselors, teachers, and administrators demonstrate little consciousness or awareness that these biases should be ameliorated. The evidence suggests that sex equitable practices are the exception rather than the norm in vocational education in Illinois, and that sex inequity pervades to some degree at all levels and kinds of voca-

tional training. The major purpose of this review has been to present a status picture of sex equity in vocational education in Illinois. In satisfying this purpose the review emphatically portrays the need for programs which seek to improve the existing conditions. The conclusions of this review are clear and need no reiteration. More important are the implications for what areas to address and actions to take.

A comprehensive program to make vocational education equitable in Illinois must be a multifaceted program involving parents, employers, students, teachers, counselors, and vocational trainers. The program must recognize the early age by which sex stereotyped attitudes are engrained. It should take advantage of increasingly egalitarian social attitudes as sites for positive innovation. It must also recognize the subtlety and pervasive nature of stereotyping and the degree to which occupational sex stereotyping is supported in the home, school, and work. Lastly, it must bring to the awareness of men and women those biases which affect their preferences and actions. The following statements summarize both generally and specifically the needs and recommended actions.

I. EXPECTATIONS AND ATTITUDES ORIENTATIONS. The literature is clear in documenting the significant input of parents, particularly mothers, in the formation of women's occupational attitudes. Furthermore, these attitudes are formulated by the time the child enters kindergarten. Parent education is, therefore, essential for modifying stereotyped images held by the parent and child. In addition, support systems for men and women in preparation for employment in non-traditional careers must be devised and implemented at the primary, secondary, and postsecondary levels to combat high dropout rates and offset social sanctions imposed by male peers and superordinates.

II. EQUAL ACCESS. There must be equal access for boys and girls to quality services and programs in guidance and counseling services, class assignments, career preparation and training programs, curricular and extra-curricular activities, work-study programs, etc. Equal access in and of itself does very little to change enrollment patterns. In addition, career education programs that begin in elementary school and go through high school, combined with active recruiting, are necessary to accomplish change.

III. EQUAL TREATMENT. Students should be treated equally regardless of sex in class activities, student-teacher relationships, classroom climate, co-educational programming, counseling and guidance services, curriculum guides, distribution of physical facilities, vocational programs, etc. Language that is sexist should be reformulated. Role models should be examined to insure non-sexist images exist. Sex-biased books, materials, course descriptions, and recruitment materials must be removed. Current interest inventories must be replaced with sex-fair tests.

IV. RESOURCE ALLOCATION. Analyses should be done of faculty and student assignments to classes. Class schedules should be designed to accommodate the special needs of males and females. Support services (e.g., day care facilities, baby-sitting services) must be made available to permit working mothers to receive vocational education. Recruitment practices should be reviewed. Fiscal resources should be equitably distributed to support programs promoting sex equity.

V. AWARENESS, EVALUATION, AND PROGRAM CORRECTION. The agency or school should collect data indicating the level of awareness among their staff of the issue of sex equity. This data should be used to institute programs to raise levels of awareness and remediate biases. Since teachers are the most impor-

tant perceived school influence on occupational choice, programs aimed at implementing sex equity must positively involve and support vocational education teachers, motivating them to encourage and support their students, regardless of sex. Attempts should be made to articulate equitable programs among the various levels and components of the vocational education program in the state system. Employment data (e.g., trends, forecasts, projections) should be collected and distributed to staff and students. Agencies and schools must analyze their programs to see the extent to which sex equity is implemented in affirmative action programs, tolerated benignly, neglected, or actively discouraged.

References

Altman, S.L. & Grossman, F.K. Women's career plans and maternal employment. Psychology of Women Quarterly, 1977, 1, 365-375.

Beach, A.M. A review of the literature concerning behaviors which inhibit or reduce sex role bias and sex role stereotyping. Columbus, Ohio: Center for Vocational Education, Ohio State University, 1977.

Berman, Y. Occupational aspirations of 545 female high school seniors. Journal of Vocational Behavior, 1972, 2, 173-177.

Bingham, W.C. & House, E.W. Counselors view women and work: Accuracy of information. Vocational Guidance Quarterly, 1973, 21, 262-268.

Burlin, F.D. Occupational aspirations of high school females. School Counselor, 1976, 24, 102-108.

Cole, N.S. & Hanson, G.R. Impact of Interest Inventories on Career Choice. Washington, D.C.: The American College Testing Program, National Institute of Education, 1975.

Dewey, C.R. Exploring interests: A non-sexist method. Personnel and Guidance Journal, 1974, 52, 311-315.

Diamond, E.E. Issues of Sex Bias and Sex Fairness in Career Interest Measurement. Washington, D.C.: Department of Health, Education, and Welfare, National Institute of Education, Career Education Program, 1975.

Dittman, J.K. Sex role perceptions of North Dakota vocational educators. Fargo, North Dakota: Final Report. Research Series #38. North Dakota State University, College of Home Economics, 1976.

Esslinger, C.W. Educational and occupational aspirations and the educational, personal, and family characteristics of selected 12th grade female students. Unpublished doctoral dissertation. University of Illinois, 1976.

Farmer, H.S. & Backer, T.E. New Career Options for Women. New York: Human Sciences Press, 1977.

Frueh, T. & McGhee, P.E. Traditional sex-role development and amount of time spent watching television. Developmental Psychology, 1975, 11, 109.

Goode, W.J. Norm commitment and conformity to role-status obligations. American Journal of Sociology, 1960, 66, 246-258.

Hagen, D. Careers and family atmospheres: An empirical test of Roe's theory. Journal of Counseling Psychology. 1960, 1, 251-256.

Harris, S.R. Sex typing in girls' career choices: A challenge to counselors. Vocational Guidance Quarterly, 1974, 23, 120-133.

Hawley, P. Perceptions of male models of femininity related to career choice. Journal of Counseling Psychology, 1972, 19, 308-313.

Illinois Council on Economic Education. Analyzing sex bias and career choices of students exposed to career and vocational education programs. Dekalb, Illinois: Northern Illinois University, 1977.

Kane, R.D., Frazer, P., & Dee, E. A study of the factors influencing the participation of women in non-traditional occupations in post-secondary areas of vocational training schools, Volume I. Washington, D.C.: Final report to the Department of Health, Education, and Welfare, Office of Education and Bureau of Occupational and Adult Education, 1976.

Karr, J.A. The effects of cross-cultural sex role material on sex role stereotypes of kindergarten children. Unpublished doctoral dissertation, Northern Illinois University, 1976.

Kirchner, E.P. & Vondracek, S.I. What do you want to be when you grow up? Vocational choice in children aged 3 to 6. Paper presented at the biennial meeting of the Society for Research in Child Development, 1973.

Kreps, J. Sources of inequality. In E. Ginzberg and A. Yohalen (Eds.), Corporate Lib: Women's Challenge to Management. Baltimore: Johns Hopkins, 1973.

Kriger, S.F. Need achievement and perceived parental child-rearing attitudes of career women and homemakers. Journal of Vocational Behavior. 1972, 2, 419-432.

Lecht, L.A., Matland, M.A. & Rosen, B. Changes in occupational characteristics in the next decade: their implications for planning in vocational education. Washington, D.C.: Department of Health, Education, and Welfare, Office of Education, and Bureau of Occupational and Adult Education, 1976.

Lerner, J., Bergstrom, F., & Champagne, J.E. Equal Vocational Education. Houston: Center for Human Resources, University of Houston, 1976.

Lerner, R.M., Vincent, S., & Benson, P. One year stability of societal and personal vocational role perceptions of females. Journal of Genetic Psychology, 1976, 129, 173-174.

Lewis, M.V. & Kaltreeder, L.W. Non-traditional vocational education programs for women. University Park, Pennsylvania: Institute for Research on Human Research, Pennsylvania State University, 1976.

Looft, W.R. Sex differences in the expression of vocational aspirations by elementary school children. Developmental Psychology, 1971, 5, 366.

Medvene, A.M. & Collins, A. Occupational prestige and its relationship to traditional and non-traditional views of women's roles. Journal of Counseling Psychology, 1974, 21, 139-143.

Nies, J.I. Area vocational center teachers' perceptions of the impact of Title IX on vocational education. Unpublished doctoral dissertation, University of Illinois, 1978.

Penn, J.R. & Gabriel, M.E. Role constraints influences on the lives of women. School Counselor, 1976, 23, 252-254.

Peterson, L.E. Career aspirations of freshman women enrolled in community college office occupations curricula. Unpublished doctoral dissertation, University of North Dakota, 1976.

Prediger, D.J., Roth, J.D., & Noeth, R.J. Nationwide study of career development: summary of results. Iowa City, Iowa: Research and Development Division, The American College Testing Program, 1973.

Project HEAR. A unique program in career education. Princeton, New Jersey: Cogent Association, 1976.

Rand, L.M. & Miller, A.L. A developmental cross-sectioning of women's career and marital attitudes and life plans. Journal of Vocational Behavior, 1972, 2, 317-331.

Rieder, C.H. Work, women, and vocational education. American Education, 1977, 13, 27-30.

Roe, A. The Psychology of Occupations. New York: Wiley, 1956.

Roe, A. & Seligman, M. The Origin of Interests. Washington, D.C.: American Personnel and Guidance Association, 1964.

Schlossberg, N.K. & Goodman, J. A woman's place: Children's sex stereotyping of occupations. Vocational Guidance Quarterly, 1972, 20, 266-270.

Shinar, E.H. Sexual stereotypes of occupations. Journal of Vocational Behavior, 1975, 1, 99-111.

Slocum, W.L. & Bowles, R.T. Attractiveness of occupations to high school students. Personnel and Guidance Journal, 1968, 46, 754-761.

Smith, A. Stamping out sex stereotypes in North Carolina. American Vocational Journal, 1976, 30-33.

Steiger, J.M. Vocational preparation for women: a critical analysis. Springfield, Illinois: Research report to the Illinois Board of Vocational Education and the Rehabilitation Division of the Vocational and Technical Education Research and Development Unit, 1974.

Sternghanz, S.H. & Serbin, L.A. Sex role stereotyping in children's TV programs. Developmental Psychology, 1974, 10, 710-715.

Switzer, D.K., Grigg, A.E., Miller, J.S. & Young, R.K. Early experiences and occupational choice: A test of Roe's hypothesis. Journal of Counseling Psychology, 1962, 9, 45-48.

Tangri, S.S. Determinants of occupational role innovation. Journal of Social Issues, 1972, 28, 177-200.

Thomas, A.H. & Steward, N.R. Counselor response to female clients with deviate and conforming career goals. Journal of Counseling Psychology, 1971, 18, 352-357.

U.S. Department of Labor. Occupational Outlook Handbook. Washington, D.C.: Bureau of Labor Statistics, 1976.

Utton, A.C. Recalled parent-child relations as determinants of vocational choice. Vocational Rehabilitation and Education, 1960, 3 & 4, 20.

Vinzeni, H. Minimizing occupational stereotypes. Vocational Guidance Quarterly, 1977, 25, 265-269.

Women Employed. Women in the Economy: Preferential Mistreatment. Chicago, 1977.

Women's Bureau. The Earnings Gap Between Women and Men. Washington, D.C.: U.S. Department of Labor, Employer Standards Administration, Women's Bureau, 1976.

Women's Bureau. Most Women Work Because of Economic Need. Washington, D.C.: U.S. Department of Labor, Employment Standards Administration, August, 1977.

Women's Bureau. Women in the Labor Force: Annual Averages 1976-1977. Washington, D.C.: U.S. Department of Labor, Women's Bureau, February, 1978.

IV. Methodology

The purposes of this section are to explain the methodology used in developing the five-year plan to achieve sex equity and to summarize the data sources and findings. The general procedures were to (a) collect data, (b) synthesize the data, (c) present the data, (d) get feedback, (e) achieve consensus, and (f) repeat the cycle with additional data. This cyclical process was repeated until a manageable plan which could be effective in bringing about sex equity in vocational education for the state of Illinois was completed.

The framework for these procedures is supplied by the Delphi Method. The Delphi Method is a sequenced program of interrogation interspersed with feedback. The method is typically open-ended and follows a divergent-convergent pattern. Through a process of repeatedly soliciting feedback on collected data, consensus is reached for objectives and activities to be carried out.

Nine steps in the development of the five-year plan can be identified. These steps will be explained and their outcomes summarized. The nine steps are:

(1) Interviews with DAVTE staff

(2) Review of the literature on sex equity issues

(3) Site visits to Illinois schools

(4) Survey questionnaire

(5) First conference--May 15th

(6) Objectives Ranking Instrument

(7) Second conference--July 17th

(8) Continued use of DAVTE resources

(9) Synthesis by Roosevelt University staff

(1) Interviews

Interviews were conducted by Roosevelt University staff members with Jim Galloway, Ronald McCage, Dick Hofstrand, Connie Cline, and Sally Pancrazio. The interviews were conducted in the spring of 1978. The following section summarizes the interview questions and responses.

I. What do you perceive to be the Federal legislative mandate regarding sex equity?

Most of the interviewees responded with statements about providing equal access and removing existing barriers to educational and occupational choices, particularly for women. Galloway suggested the "educators are not as biased as the kids." Necessary changes in the structure and relationship of counselors were possible but what Galloway sees as essential are parental and child attitude changes during the elementary school years.

McCage also emphasized equal access noting that the need to change the distribution of enrollments within vocational education areas is more important than increasing enrollments of women.

Hofstrand also noted the emphasis on access as opposed to affirmative action. He spoke of the necessity of psychologically preparing students who will enroll in non-traditional areas for the abuse they may face.

Cline made a distinction between Title IX and the 1976 amendments. The former are directed toward "keeping classes open to both sexes." The latter go one step farther in that they "specify eliminating sex bias and sex role stereotyping, creating awareness of the problem, and taking action to reverse present attitudes."

Pancrazio noted the applicability of the issue of sex equity to all levels and types of education in addition to vocational education. She would like to see more of an emphasis on management training for women than on "typing or

cosmetology for boys."

II. What are the statewide components of the vocational education system?

Placement, counseling, instruction, recruitment, administration, and teacher training were mentioned by most respondents. Hofstrand also mentioned open enrollment, sex bias of employment officers, instructional strategies, and emphasized the heavy reliance on teacher training institutions.

Recruitment (including teacher as well as counselor responsibilities) and parent-child attitudes also appear to be critical areas that demand attention.

III. How well is Illinois doing in achieving sex equity in vocational education?

Galloway stressed administrator support as essential and felt that some members of his staff would be reluctant without pressure from his office.

McCage spoke of the four years of work that have already gone into this effort. He stressed again, however, the necessity of starting at the pre-school level and the necessity of a wider perspective. Vocational education is just part of a more general equity issue that is quickly spreading to ESEA and special education legislation.

Hofstrand endorsed Galloway's assessment of the difficulty of moving administrators. He also noted improvement among counselors. He recognized though that what are ostensibly open access arrangements are often hindered by subtle guiding processes which lead to traditional enrollment patterns.

Cline rated the current status of sex equity as very poor overall.

IV. What evidence do you have of the status of sex equity?

Respondents confirmed that little in the way of rigid evaluations have been done to this point. There are various impressions, some printed, most obtainable from people active in vocational education around the state. Some

data has been collected in Joanne Steiger's[1] report and other information is available through a bibliography from the Ohio State Center.

The mandate for including a reference to sex equity in LEA 1 and 5 year plans had just been issued at the time of the interviews, and so data in the 700-800 plans on file with DAVTE did not reflect this mandate.

(2) Literature Review

The literature review by Schreiber and Asser attempted first to place the issue of sex equity in an economic context. To that end, data published by the Women's Bureau of the Department of Health, Education, and Welfare was analyzed and discussed. The basic conclusions were (1) that the working woman is a permanent product of our technology, (2) that 90% of women will work sometime during their lifetime, and (3) that economic discrimination is pervasive.

After the introduction of role theory as a theoretical perspective applicable to sex role stereotyping in education and occupations, the literature of occupational choice, occupational socialization, and programs of non-traditional vocational training was reviewed. Their review was limited to studies that use systematic, empirical analyses of programs or research data. Use was made of literature available in professional journals (e.g., Journal of Vocational Behavior, Vocational Guidance Quarterly, Psychology of Women Quarterly) as well as library systems (ERIC) and government data. An ERIC search was the point of origin for collection of an appropriate and complete bibliography. A draft version was prepared and sent to participants of the May 15th Sex Equity Conference including Roosevelt University staff and DAVTE personnel. Additional citations were solicited and incorporated into the final draft.

---

[1]Steiger, J.M. Vocational preparation for women: A critical analysis. Springfield, Illinois: Research report to the Illinois Board of Vocational Education and the Rehabilitation Division of the Vocational and Technical Education Research and Development Unit, 1974.

In brief the findings were these:

The first step in progressing toward sex equity in vocational education is to understand the occupations and aspirations of girls and boys and to know the persons who most influence those aspirations. The literature reveals that most girls aspire to just three occupations--secretary, nurse, and teacher--and that they develop those aspirations as early as 5 years of age. They express no interest of any kind in the trades. Both elementary and high school boys and girls report aspirations to traditionally sex-stereotyped occupations.

Parents, and particularly mothers, have the most influence over their child's choice of a traditional or non-traditional career. There is some data to indicate that peers are second most influential, while teachers rank third, and counselors fourth.

The overwhelming direction of that socialization is to push girls toward traditional careers. Sex-biased books, classroom materials, interest inventories, and recruitment materials, while not a primary socializing influence, reinforce stereotyped sex roles. The outcome is that most girls who do not go to college want to be secretaries.

To offset the traditional socialization girls and boys receive, career education programs have been initiated around the country. The results from the few that have been evaluated are very encouraging, indicating that occupational sex stereotyping can be reduced by setting up new role expectations for students.

There is a small amount of published research on participation in non-traditional vocational education programs. It is clear that very few women are training for non-traditional careers. What is even clearer, however, is that significant support must be forthcoming to help women in non-vocational roles survive both the abuse and neglect aimed at them by teachers, employers, and

colleagues.

(3) Summary of Site Visits

Introduction

One source of data for the plan was the observation and study of four school sites receiving vocational education funds. Sites for the observation visits were selected cooperatively by the state education agency and the Roosevelt University staff. The sites were selected to include rural and urban schools, large and small programs, and locations in the northern, central, and southern regions of the state. The four sites included one junior college, one comprehensive high school, one area vocational center, and one elementary school.

Sites

The junior college was Truman College, one of the Chicago City Colleges, located in the uptown area of Chicago. The college serves a culturally and ethnically diverse population of about 1,000 students. Twenty-one career programs are offered, under the direction of Dr. John Gianopulos, Dean of Careers.

Orion High School, a comprehensive high school with 500 students, is located near the Quad Cities in western Illinois. Four occupational programs are offered at the school: agriculture, industrial arts, home economics, and office practice. Additional programs are available at the nearby area vocational center in Moline. The visit was arranged by local vocational director Tom Nicholson.

The area vocational center selected for observation was Danville VOTEC in central Illinois. The school offers a wide range of vocational programs to students from the surrounding school districts. Hosting the visit was Paul Wasser.

The final visit was made to three elementary schools and one junior high school in Edwardsville, Illinois, in the southern region of the state. The district offers a continuous program of career education, K-8, under the direction of Dr. Gerald Webb, local vocational education director. In addition, a series of hands-on mini-courses in eight occupational areas are required for all junior high school students.

Procedures

Two-day visits were made to each site. On the first day, the visiting staff met with the local vocational education director, who then arranged interviews and observations for the remaining time. Interviews were held with the superintendent, principal(s), counselors, department chairpersons, occupational program teachers, library staff, student organization sponsors, parents, students, local employers, and advisory council members. Observations were made of vocational education classes, student organization meetings, counseling activities, and advisory council meetings.

A list of questions, adapted from the DAVTE Site Evaluation Team Member's Handbook, was used to guide the interviews and observations. Questions included concerns in each of the six functional areas for which funded programs are accountable under the state evaluation scheme: (1) planning and evaluation, (2) occupational programs, (3) student services, (4) personnel, (5) program management, and (6) community resources. The questions are attached in Appendix A.

At the end of the first day, the visiting observation team met to review their findings, begin preparation of the report, and assess what information had yet to be gathered. Interviewees' comments and observational data were recorded. Whenever possible, written documents were obtained to supplement and support the findings. Below is a list of documents which were collected by

visiting observers:

One and five year plan
Most recent DAVTE evaluation report
Class enrollments by program and sex
Cooperative work placements by program and sex
School newspapers
Any publications produced by vocational education departments or programs
Copies of communication to parents or employers regarding occupational programs
Instruments used to assess attitudes toward sex equity among administrators, staff, students, parents, and employers
Class schedules with course descriptions
Curriculum guides for career education or occupational programs
Resource lists for sex equity-related materials prepared by local library staff
Map of school indicating program classroom and lab space
Copies of position descriptions for administrators, counselors, and occupational program faculty
Agendas and minutes of advisory council meetings
Agendas and minutes of vocation-related student organizations
Copies of job announcements distributed to students
Reports of student organization activities

Summary of Findings of Site Visits

Planning and Evaluation

Once every five years, each funded vocational education program in Illinois is visited by a team of trained evaluators. After a series of interviews and observations, judgments are made about how well the program is meeting standards imposed by the state education agency. These evaluations have considered the issue of sex equity only since fall of 1977. Of the four sites visited by Roosevelt University staff, only Orion High School had been evaluated during this time period. The evaluation report, submitted by team leader Dr. Wayne Zook of Illinois State University, stated that "there is no evidence of sex bias or stereotyping which may preclude the enrollment of students in once regarded as traditional boy or girl courses."

Our visit revealed that many barriers to sex equity remain, as might be

expected. Director Tom Nicholson agreed. Administrators, staff, and students are just now beginning to recognize the barriers that they themselves construct and perpetuate. According to Nicholson, "If you're not aware of what's going on, it's hard to be concerned." The principal reiterated that "sex equity is not a high priority issue in this community."

None of the schools had a formal system in evidence to evaluate progress toward compliance with sex equity legislation. All the districts had appointed a Title IX coordinator, but only two had formulated a specific school policy statement regarding sex equity. None of the schools had included sex equity objectives in their local plans, and none of them had made plans to gather information about practices to further sex equity in occupational programs.

There was, however, much evidence of increasing attempts at awareness of the problem. Speakers had been brought in to address students, faculty, and advisory boards about expanded career options for all students. Some administrators and staff had attended workshops or seminars away from the school dealing with issues of sex equity. However, there were no formal means for communicating the outcomes of these workshops to other staff members in the school. The only means observed for disseminating information about sex equity was informal discussions among teachers and administrators. Staff members who had training experiences were enthusiastic about what they had learned and expressed a desire to share the information with others.

None of the four schools had formally measured teachers', parents', students', administrators', or employers' attitudes towards sex equity. All the vocational directors indicated that attitude assessment instruments were badly needed for use in working with these groups. One director suggested that pre- and post-attitude measures be used with inservice training, so that participants who were positively affected by the training could be identified. These par-

ticipants could be used as initiators in the school to disseminate ideas and information.

At the elementary level, sex equity is seen as one aspect of the career education program which provides occupational information to students. At Edwardsville, a curriculum guide for career education, K-8, had been made a part of the social studies curriculum. There was no system, however, for monitoring to what extent or how well the curriculum was being implemented.

All four districts had an official policy to consider local occupational opportunities and conditions in the development of new training programs or in the expansion or elimination of old ones. Program directors kept themselves informed about job market demands and the areas of work of interest to students. There was no evidence, however, of an awareness of changing work roles for women.

Occupational Programs

All the schools relied heavily on printed materials produced commercially as teaching aids, or distributed by companies to give occupational information. All schools had a resource file available to students, showing the characteristics and requirements for various occupations. Illustrations or descriptions of non-traditional work roles were exceedingly rare. All schools indicated that purchase of non-sexist occupational information materials was a low priority item. Students must seek out this information at their own initiative. Teachers, counselors, or administrators do not take responsibility for bringing the information to the students.

The more effective and persuasive ways of disseminating information were through word-of-mouth among the students and in informal discussions between students and teachers and students and counselors. This system perpetuates stereotyped classes, because contacts with certain teachers are sex-determined. As one clerical office practice teacher said, "I don't have a chance to tell

boys about my classes--I never see boys."

Two girls reported that they had enrolled in metal shop class after visiting the shop during their study hall period. There was no other means available to them to learn about the content and process of the shop class. Students suggested that an open house or visiting schedule for interested students could be used for disseminating information about non-traditional programs. Bulletin board displays or information campaigns for specific programs were also suggested.

In the junior high schools at Orion and Edwardsville, mini-courses in all occupational areas were required for all students. Boys and girls were exposed to introductory experiences in cooking, sewing, child care, home furnishings, wood shop, metal shop, electronics, and drafting. Teachers agreed that students' abilities and performance could not be predicted by their sex. The mini-course program had been in existence for five years at Edwardsville, yet there had not been an increase in the number of students choosing non-traditional classes at the high school level.

With the 1976 amendments which forbade sex-segregated classes, the foods class for girls and the Beginning Chef class for boys at Orion High School were combined to make Foods I a co-ed class. Boys were at a disadvantage because they had not been socialized to the cooking task at home and had not participated in the home economics orientation class required for girls. They were not familiar with such basic skills as measuring and using oven controls, and were often too timid to ask questions. Most boys were content to sit back and let the more experienced girls do all the cooking. Others were so uncomfortable they dropped out.

The decision was made to separate the classes again so that boys would have more opportunity to participate in the activities. The enrollments of male

students in cooking classes increased immediately to pre-1976 levels. Male enrollment in the advanced food service course, which is co-ed, also increased. Several male students said they felt more comfortable in the segregated class.

All programs were adequately supported financially. All sites visited were enjoying some growth in enrollments, and so were able to expand and improve their educational programs. This, however, may not be representative of most schools in Illinois.

At the elementary level, there was some reluctance to replace sexist teaching materials with non-sexist products. The list of materials in the K-8 career education curriculum guide had not been chosen on the basis of freedom from sex bias and sex role stereotyping. One series listed ("I Want to Be a _____") is on the National Organization for Women's not recommended list of teaching materials.

Many teachers at the elementary level considered career education to be superfluous, something that could be eliminated in the press of time to complete work in reading, math, etc. It was viewed by some as a two-week social studies unit that sometimes got crowded out of already busy days. Some particularly skilled teachers were able to integrate concepts of career education and expanded career options for boys and girls into many areas of the curriculum.

Vocation-related student organizations were found only at the comprehensive high school. Some efforts had been made to recruit girls into Future Farmers of America and boys into Future Homemakers of America, in order to expand the variety of activities available in the clubs, and to create greater interest in club activities. Some all-boy and all-girl clubs planned joint activities. Orion High School's FFA had a female vice president, and the FHA had one male officer.

Although we found no institution-wide encouragement to do so, some teachers

had made efforts to recruit non-traditional students for their classes. One agriculture teacher actively encouraged girls to enroll in his classes for these reasons: "(1) it makes the class better, (2) girls can do just as well or better than the guys, (3) the guys are better with girls in the class, and (4) there are many jobs girls can get in agriculture." He was able to place five girls in agriculture-related cooperative work placements. On the other hand, one industrial arts teacher discouraged girls from enrolling tn the advanced metal shop, because "girls don't like to get dirty." Students who participated in non-traditional classes and clubs reported that their classmates and fellow club members were generally very friendly and helpful. Some suffered teasing, but only from their sex peers outside the class or club.

Student Services

Some support system is required for students who enter non-traditional classes. Although no formal support groups were in evidence, several informal means of support were available to successful non-traditional students: (1) Peer support was very powerful. When students who enjoyed positions of leadership or popularity in the school entered non-traditional classes, it was easier for other students to follow. (2) Parents provided support and role models. For example, the daughter of the industrial arts teacher was enrolled in the advanced woodworking shop. One student whose father was a farmer became an outstanding agriculture student and an FFA officer. She looked forward to assuming responsibility for the family farm. A boy whose father was a gourmet cook was enrolled in the advanced food services course. (3) Some parents encouraged their children to participate in non-traditional classes because they considered the skills useful. For example, sons were encouraged to learn to type or cook, while daughters were encouraged to learn automobile repair. (5) Favorable teacher attitudes and acceptance were often sufficient to keep

students in a non-traditional class.

Formal and informal interest and aptitude tests were used at the high school level. No sex bias in their use was apparent. However, some students felt that the tests were used in superficial ways. For example, a girl was advised to consider forestry because of her responses to an interest inventory but was not given an accurate job description of forestry occupations and was not advised of the difficulty of getting a job in that area.

The only school with a formal placement service was Truman College. They located jobs for students (part-time and full-time) and for graduates. A weekly job journal was circulated and workshops were held to teach students how to look for their own jobs. Employers often called for a student of a certain sex to fill a particular job. They often requested a "beautiful girl" to fill a secretarial position, or a "strong boy" for a skilled trades position though federal laws prohibited the advertisement of jobs for one sex. Employers sometimes complained if a boy appeared to interview for a clerical job or a girl for a law enforcement position.

High school vocational directors related some difficulty in finding cooperative work placements for students in non-traditional areas. One well-qualified female student in auto mechanics found difficulty getting placed, even though she was eligible for CETA assistance. Employers felt that her placement in an auto mechanics shop was inappropriate because of the cursing that goes on there.

One counselor at Truman indicated that much of her time with female students was spent imagining and exploring possibilities for employment outside traditional feminine work roles. She encouraged them to fantasize about a wide range of options. She found this necessary because entry-level positions in such female dominated areas as child care, food service, clerical, and

nursing are low pay, low status, and over-crowded. She believed that greater opportunities and more chances for advancement could be found in other areas. Her approach to career counseling was unique. The rest of the counseling staff did not consider this type of work with students as appropriate for their counseling role. Most staff members preferred to work within the limits of the student's stated preference, even though the range of possibilities might be quite narrow.

Some counselors felt that having eight periods in the day gave students more opportunity to take different courses, including non-traditional occupational courses.

Personnel

There were no instances of male or female teachers working in non-traditional areas. One exception had been a male instructor in the nursing program at Truman College. He had recently left Truman for a better paying job. Efforts to recruit another male nursing instructor had been unsuccessful. One of the agriculture teachers at the high school level indicated that he had graduated from Northern Illinois University along with a number of women who were preparing to be agriculture instructors. These women had no difficulty obtaining teaching positions in the state.

Five female administrators had recently been hired at Truman College. Since these were the most recently filled positions, they were all junior level positions. One of the elementary school principals in Edwardsville was a woman. She had been hired last year, primarily because of her expertise in education of exceptional children.

At the time of our visits, no inservice activities had been planned or carried out, nor had staff been polled as to their perceived needs in this area. Some selected counselors and teachers had attended workshops and seminars

away from their schools dealing with sex equity issues. No formal means for sharing this information with the rest of the school had been devised.

An inservice day to focus on sex equity is being planned now by director Tom Nicholson at Orion High School for the fall of 1978. He hopes to identify people who are positively affected by the inservice activities, so that they can become teacher initiators to encourage greater awareness of the barriers to sex equity in educational practices. He stressed the need for instruments to assess the attitudes of teachers, counselors, students, administrators, advisory council members, and potential employers. There is a need to collect baseline data on these groups now, so that effects of training can be accurately assessed.

Those teachers who had been to workshops and seminars indicated that their attitudes had changed when they became aware of the subtle barriers imposed by teaching strategies, counseling practices, disciplinary methods, and administrative organization.

(4) Survey Questionnaire

The survey questionnaire (see Appendix B) was designed to collect data on the status and needs of achieving sex equity in vocational education for the state of Illinois. The survey population was a group of experts on sex equity and vocational education. This group was identified through many sources e.g., consultation with DAVTE staff, citations from the literature review. The experts were contacted and asked (a) to complete the survey questionnaire, and (b) to attend the May 17 conference.

A sample of 20 questionnaires was used to describe the status and needs of sex equity. In summary, the findings are: (1) awareness is low, with parents and students being least aware of the problems and needs of sex equity; (2) at-

titudes are important, the attitudes presently held hinder rather than facilitate the implementation of sex equity; (3) the practices of administrators and vocational teachers are very important to achieving sex equity, but currently do not facilitate that achievement; (4) much improvement is needed in (a) potential job opportunities, (b) dissemination of information to parents, and (c) inservice programs on sex equity, and (5) that objectives for awareness and attitude change should be the focal concerns of the DAVTE five year plan.

The information from this questionnaire was used as a partial basis for the work at the May 17 conference.

(5) First Conference--May 15th

The task of the May 15th conference was to generate ideas. Substantial pre-conference work had been done by the Roosevelt University staff in the form of the literature review and site visits. Now the task was to appraise the 24 experts from Illinois and around the country of those findings and provide a framework from which they could generate goals, objectives, and activities for the 6 initial role groups we had identified as important for implementing sex equity (i.e., Administrators and Counselors, Teacher Trainers, Vocational Education Teachers, Employers, and Parents).

The social and economic background of sex equity and occupational planning were set in perspective by Professor Robert Havighurst of The University of Chicago's Department of Education. Havighurst presented data comparing the ratio of 15-24 year olds to 25-64 year olds in the U.S. by decade from 1890 to 1970. Projections continuing the trend to the year 2000 were included. Havighurst noted that in 1890, at the height of U.S. agrarian existence and immigration influx, there was one 15-24 year old for every two 25-64 year olds. Though the total number of young people grew consistently from 1890-1960, their

percentage of the total population and the ratio with 25-64 year olds continuously declined until in 1960 there was approximately one 15-24 year old for every 3 people over 24. This decline was a result of a lower immigration role, and especially increased longevity.

Figures for 1970 and forecasts for 1980 show that the post World War II baby boom is bringing the 15-24 year olds to their largest population total increasing the ratio of young people significantly. These figures go a long way towards explaining the problems of the job market and unemployment in the post Viet Nam decade when most of these people began their careers.

Forecasts for the future show today's women producing fewer children with the result that the end of the century will find a smaller group of young adults and presumably a less severe employment situation.

Following Havighurst's remarks, the 24 experts were divided into 4 groups, each being led by a DAVTE staff member and an RU staff member. Since the order of the day was the generation of ideas, the small groups were instructed and encouraged to show no limits in their imagination and to place no constraints on their recommendations. Experts were assigned to small work groups on the basis of their pre-conference responses to the interest and experience survey. Each group was given work sheets to allow group members to specify idealized and actual behavior of the role group they were to work on. After discrepancies were identified, group leaders directed participants in drawing objectives to introduce new behaviors where appropriate and remove old behaviors which hindered sex equity. After a sharing of ideas over lunch, the groups resumed their deliberation. The final event of the day was another report by small group representatives to the general group with reactions of DAVTE staff members and a summarization by the RU project director.

Two types of evidence indicate that the conference was successful. The

post meeting reaction sheets contained uniformly favorable comments about the conference objectives, format, and leadership. (Indeed, the most frequent criticism--that there wasn't sufficient time--can also be seen as evidence that the conference was successful. Participants praised the conference direction even if time constraints did not allow some participants as much discussion as they desired.) Participants found the conference helpful in gaining new insights and ideas, and allowed them opportunities for raising questions and contributing to discussions.

In addition, the small groups produced several objectives for most role groups. These objectives were the focus of the continuing Delphi process after the conference. Each RU group leader finalized and completed the list of of objectives his/her group had recommended. These lists were then circulated among the RU staff and finally synthesized into between 8 to 16 objective statements of objectives for each of the role groups plus DAVTE.

(6) Objectives Ranking Instrument

The Objectives Ranking Instrument (see Appendix C) was used to collect information on priorities for objectives toward accomplishing sex equity. The items in this instrument were derived from the task worksheets of the May 15 conference and from the earlier data sources (literature review, site visits, etc.). The ranking instrument was composed of lists of knowledge, attitude, and skill objectives for different role groups (administrators, counselors, etc.).

The instrument was mailed to all the May 15 conference participants and also to others identified as interested and knowledgable on sex equity issues. The respondents were asked to rank order each list of items on two dimensions: importance and temporal series. Further, respondents were asked to rank order specific objectives for DAVTE.

Thirty-three instruments were completed and returned. The dimensions of importance and temporal series correlated highly (r = .95) and thus were combined for analysis.

The results of the survey demonstrated some clear patterns of both general needs and specific functions for each role group. The general needs identified were the necessity for (1) motivational development by all role groups, (2) the development of an evaluation component for use by LEA's, and (3) to create a desire on the part of role encumbents to examine their own beliefs and attitudes toward sex equity. The consensus on motivational and awareness objectives identifies these two components as the most timely and salient for bringing about sex equity.

The specific objectives identified for role groups tended to reflect traditional activities of the various roles.

(1) Administrators: responsibility for knowledge of state and federal law, of ongoing discrimination in their schools, and of change techniques.

(2) Counselors: responsibility for interpersonal relations with students and among other role groups, including responding to sexist behavior in themselves and others.

(3) Vocational Education Teachers: responsibility for introduction of non-sexist role models.

(4) Employers: responsibility for changing their recruitment and induction procedure(s) towards new employees but not towards present employees.

(5) Professional Developers: responsibility for a limited knowledge function, designed towards practical application rather than involving research or evaluation.

(6) Parents: responsibility for awareness of competing influences on their children.

(7) DAVTE: responsibility for development and dissemination of "awareness." The findings from the ranking instrument were summarized and presented to the conferees at the July 17th workshop. These data then served as a partial basis for determining the work of that conference.

(7) Second Conference--July 17th

With the commencement of the July 17th conference, the Delphi procedures moved into a stage of synthesis and generation. Dick Hofstrand fondly referred to the mission of this stage as the development of "damned far out ideas." Many of the experts responded positively to the invitation to return to Chicago for a second conference. In an initial large group session, the Delphi process was reviewed, and interpretations of data derived from the Objectives Ranking Instrument were presented. Small groups were again used, only this time the charge was to evaluate the lists of objectives that had been deduced from the Delphi instrument, make any changes deemed necessary, and generate a complete list of activities to accompany each objective.

Participants were divided into 5 discussion groups. Each focused on one of the components used in DAVTE three phase system of evaluation: occupational programs, personnel, program management, planning and evaluation, and student services. Each small group was led by an RU staff member.

From all perspectives this conference was a success. Participants rated the conference as a very interesting experience which provided new insights and information and an adequate opportunity for expressing their ideas in the component groups.

Conference objectives were rated as clear, appropriate, and accomplished. The format was uniformly rated very appropriate. Participants felt their groups were successful in producing objectives and activities and that these were com-

plete and that many were attainable.

These lists of objectives and activities formed the basis of a draft of the 5-year plan taken to Springfield for discussion with the DAVTE staff on July 31, 1978.

(8) Continued Use of DAVTE Resources

The DAVTE staff played a continuing and vital role in the development of the five-year plan.through interview interview responses, conference participation, and in other forms of assistance (e.g., identifying experts).

There were ongoing consultations with the DAVTE staff and the tentative sex equity plan developed by DAVTE served as the basis of the outline of the first RU report. Access to other state documents as well as LEA 1 and 5-year plans was facilitated by DAVTE. Two working conferences were held between DAVTE and the Roosevelt staff.

July 7 Meeting

On July 7, 1978 the Roosevelt University Project Staff delivered a progress report to interested parties of the Illinois Office of Education. The report provided summary portions of the five year plan for promoting sex equity in vocational education programs in Illinois. A document entitled "Progress Beyond Access" was distributed and discussed, and persons in attendance were asked to raise questions concerning its format, language, and substance, and make assessments of the appropriateness of the document overall.

Following some introductory remarks by Henrietta Schwartz, three topics were discussed providing context for the materials presented. Jane Hill reviewed the key issues brought out by the literature review of sex equity in vocational education. Samuel Davis provided summary and anecdotal information concerning the four site visits that had been conducted. George Olson reviewed

in some detail the different sections in "Progress Beyond Access" and explained the plan's organization.

Following these remarks, the floor was open for comment and questions from the Illinois Office of Education personnel. In terms of format changes, most agreed that the five-year plan should follow as closely as possible the standard formats used in other DAVTE documents of this kind. It was suggested that some knowledgable persons from DAVTE edit a portion of the plan and then meet with Roosevelt staff to explain the changes.

With respect to the language, few changes were suggested, though more than one person commented on the complexity of the language and the need for concrete and straightforward statements. It was suggested that a column be added to the goals and activity charts identifying the person or group responsible for carrying out the activity.

More general comments focused on the need for more time to read the materials presented and further explanations of what was contained. Much concern was expressed about who would carry out the projected activities. There was general consensus among attending members that another meeting was needed to go over a first draft of the five-year plan in order to present any final suggested changes. Such a meeting was scheduled at the conclusion of the meeting.

In summary, it was agreed that the concept of "Progress Beyond Access" captured the spirit of the overall goals for the five-year plan. The materials presented were accepted as adequate, with the suggested changes outlined above. With this acceptance, plans could be finalized for presenting similar information at the July 17th conference of Vocational Education Experts.

July 31 Meeting

On July 31, 1978 the second meeting between Roosevelt and DAVTE staffs was held. The Roosevelt staff presented a preliminary five-year plan for dis-

cussion and feedback from DAVTE staff members.

DAVTE staff members showed much concern with the format, length, and seeming complexity of the preliminary plan. After a lengthy discussion of the plan some suggestions for change were adopted. In general those changes required (a) specification of rationales for goals, (b) revision of format, (c) revision of some terminology, (d) presenting the plan in a chronological scheme, and (e) cross-referencing to the state plan.

The concerns and suggestions raised by the DAVTE staff members at this meeting have been incorporated into the five-year plan.

(9) Synthesis by Roosevelt University Staff

The final step to be reported differs from the others in that it was an ongoing process from the beginning to the end of the project. It was the continual analysis, reporting, and development of implications from the data that was gathered. The input and synthesis provided by the RU staff began with the development of the proposal and selection of the Delphi method.

The product of this project--A Five-Year Plan for Achieving Sex Equity in Illinois Vocational Education--builds on numerous preliminary plans varying in both substance and format. Following the July 31 meeting with DAVTE staff, the plan was finalized.

A one-month no cost extension of the contract was requested and granted. The extension was to allow more time for DAVTE members to respond to the plan presented on July 31 and also provide more time for the project's staff to accommodate the needs and suggestions from DAVTE staff.

Several suggestions and comments from DAVTE staff were received during the month of August. Also, a meeting between the Sex Equity Administration for DAVTE and the project staff was held in Chicago to facilitate the completion of

the plan. Dr. Henrietta Schwartz, Project Director, also sent to DAVTE staff members a review and summary of the mandstes of the RFP 78-136-2.12.4. which were the basis of this contract.

The continued communication between the project staff and DAVTE staff was an effort to (a) include those who would be responsible for implementation into the planning stage, (b) provide a reality check for the plans developed, and (c) enable the plan to be written in a form manageable and appropriate for DAVTE.

The process of completing a plan for implementing sex equity was strenuous, long, and difficult. Several factors contributed to the problematic nature of the plan development. First, the definition of sex equity is, in itself, problematic. The conflict between parties advocating stances ranging from maintaining the status quo to equal access to affirmative action created tension. This tension was resolved, at least for project staff, in "Progress Beyond Access."

A second problem is inherent in the interrogation-feedback-consensus process of the Delphi Method. A great deal of data was collected from multiple sources. The weighing of importance and the synthesis of findings was a lengthy and arduous task.

A third problem to be noted is the difficulty of moving from findings from data to statements of implications for polich practices and goals. Findings from data support statements or beliefs on a theoretical level. The translation from theory to practice requires both insight and imagination. Further, statements about what ought to be done must always be tentative and are replete with potential for error. The Delphi process is a means of minimizing the attendent error and facilitating statements with practical implications. A consensual basis, however, does not insure insight or imagination.

The final step in the development of the plan was the synthesis process. This was done by the project staff, most notably the Project Director, to develop

goals and activities which could facilitate the achievement of sex equity in Illinois vocational education.

V. Summary and Conclusions

The five year sex equity management and programmatic plan plus the supporting materials enclosed in this final report represent one of the most comprehensive products produced by Roosevelt University's R & D Center. It is not only designed to achieve the desired outcomes in workable steps, but, according to the literature, ranks among the most comprehensive plans devised by any state agency.

Each component of the project was designed to fulfill the mandates of the contract[1] issued by the DAVTE of the Illinois Office of Education. First, the literature review by Schreiber and Asser assessed the "state of the art" nationally and in Illinois regarding the extent of current efforts to eliminate sex role stereotyping and sex discrimination in education. The review was distributed to national and statewide experts in the area and was used in the formulations of goals and objectives. A revised version of the literature review is included in section III.

Second, to determine the possible long-range objectives which the five year plan might accomplish, the Roosevelt staff conducted four site visits to selected schools throughout Illinois. In addition, two conferences with some 30 national experts in the area of vocational education and sex equity were held at Roosevelt and interviews were conducted with several Illinois DAVTE staff members to derive a set of long-range objectives. The site visits, conferences, and interviews are described in section IV.

The third mandate was to design and develop one or more possible management and programmatic plans which could be adopted or adapted for implementation by DAVTE to achieve sex equity in vocational education. Several instruments were developed and tested to collect information regarding appropriate and workable goals, objectives, and activities for key role groups: DAVTE staff, vocational education teachers, professional developers, administrators, counselors, employers, and parents. In addition, a monitoring system was designed and presented to DAVTE managers on 7/31/78. The system and accompanying instruments were designed to be congruent with the current locally

[1] RFP 78-136-2124

directed evaluation system and site visit structure used by DAVTE. These materials are also discussed in section IV.

The activities described in the first three mandates also fulfilled the fourth mandate. The contractor was obligated to conduct several activities which would provide a data base for the design and development of the Five Year Plan. Constructing a comprehensive data base was a primary goal of the project staff. The design was such that it not only assured of breadth of data, but it incorporated a variety of types of data which complemented and supplemented each other.

Finally, the fifth mandate called for the development of possible strategies and procedures for assessing and evaluating the impact of this long-term effort. The design of evaluation procedures was an integral part of the ongoing process of developing the proposed Five Year Plan. Objectives and activities were designed to incorporate necessary evaluation functions and allow an ongoing assessment by DAVTE of progress towards the desired goals. These functions include evaluation design, problem formulation, data collection and analysis, and dissemination. The monitoring system referred to above was revised and is included in Appendix A of the report.

The goals initially specified were accomplished with concern for the sensitivity of the issues, dissonant viewpoints and strategies, and a data base for each element of the Five Year Plan and the attendant systems.

Reflections on the Process

Several of the steps in the preparation of this report raised issues of "process" that are worth considering. The literature review, for example, in its final form proved to be a valuable resource to the staff and the expert consultants. The research on which the review is based, however, revealed the tentativeness of action in this area. Much of the literature in vocational education falls into two categories: anecdotal reports of experiences or results of interest inventories. Little of the literature demonstrates any extent of methodological rigor. Samples are based on convenience rather than criteria related to the paper's purpose. Most reports that focus on

sex equity lack evaluations and instead merely report intended programs and desired outcomes. And many related research areas (e.g., sex fairness of interest inventories, early childhood socialization influences, analyses of preschool and elementary school curricula) are just taking form and have not yet been empirically studied.

Delphi procedure of generating goals and activities also had its advantages and disadvantages. As a method for generating large amounts of data, it proved very successful. But it assumed that the experts would represent a universal body of knowledge. Instead, what emerged were several parochial approaches to the problem. This provided, on one level, a challenge of synthesis and much time was spent filtering experts' responses into internally consistent categories. Much time also needed to be spent though in recognizing and ferretting out expert bias as a result of experiences limited to one aspect of what was necessarily a statewide plan.

Finally, our frequent consultation with staff members of DAVTE introduced us to the experience of formulating a comprehensive plan in the midst of an ongoing definitional process with a state agency. Substantial amounts of time and effort were contributed by the state staff to the development of the plan. What became clear after the interviews done in April and the first Sex Equity Conference was that there were differences in view among the state staff of DAVTE. Concepts of sex equity were meshed with notions of equal access and affirmative action. It became necessary to incorporate a feedback loop into our formulations to keep DAVTE regularly appraised of the form and substance of the plan. The substance which emerged from the various processes was eventually put into the standard plan form used by DAVTE.

A Closing Statement

Some of the program areas, service programs, and targetted populations shown in the final plan are outside the domain commonly associated with DAVTE. The literature review, site visits, and testimony of experts repeatedly endorsed such an expanded focus as essential. For example, parents have been only peripherally associated with

attempts to achieve sex equity in vocational education. Most model programs are aimed at high school students or working women and are designed to change their career attitudes and orientations. With intensive training and support some success is usually achieved.

However, little recognition has been paid to the research findings that sex-stereotyping in career preferences is pervasive by the time a child is five years old. Moreover, these attitudes persist throughout the elementary years. A re-orientation of efforts, not only to the young child but to the attitudes of preschoolers and their parents, particularly their mothers, is strongly suggested by the data. Unforuunately, this is an area where communication channels, formal and informal, are practically non-existent. The plan is designed to improve and increase communication between DAVTE and the school. It also encourages DAVTE to develop communication with role groups like parents, employers, and service organizations whose support and encouragement of sex equity will be essential to the success of the state's efforts.

It has been our intention to present to DAVTE a data-based plan which is creative, far sighted, capable of implementation, and consistent with the goals and systems of the state department structure. However, the R & D Center has neither the information nor the right to determine which objectives and activities will be implemented or how much they will cost. Budget allocations are the prerogative of the state office staff. It is not possible for the outside contractor to cost items out, to determine their cost effectiveness, or indeed whether they are the sole or joint responsibility of DAVTE and another agency of the state system.

Finally, the success of the Five Year "Progress Beyond Access" Sex Equity Plan depends upon a number of variables, planned and unplanned. Some of these variables can be influenced, even controlled, by the state agency; others cannot. With careful monitoring, attention to data and changing conditions, incentives, and adjustments, sex equity in vocational education can be a reality in Illinois in the next decade.

A five year plan was completed and accepted by the state agency. However, the process of completing a plan for implementing sex equity was strenuous, long and difficult. Several factors contributed to the problematic nature of the plan development. First, the definition of sex equity was problemmatic. Conflicting views existed among parties involved in the planning process, and these ranged from maintaining the status quo to facilitating equal access to demanding a strict affirmative action stance. Such diverse opinion created tension and hindered progress.

A second problem was inherent in the interrogation-feedback-concensus cycle of the Delphi process. While a great deal of data was collected from multiple sources, the Delphi method did not provide criteria for weighing the importance or categorizing data. Consequently, data synthesis was a lengthy and arduous task.

A third problem was the difficulty of moving from findings to statements of implications for policy practices and goals. Findings from data usually support statements or beliefs on a theoretical level, but their translation into practice requires both insight and imagination. Further, statements about what ought to be done are necessarily tentative and are replete with potential for error. The Delphi process provided a means for minimizing the attendant error and facilitated statements with practical implications. The consensual basis that the Delphi provides, however, does not insure insight or imagination.

The problems confronted by an outside agency doing policy research and analysis in an area of controversy are complex and infrequently lend themselves to solution. Rather, consensual responses are negotiated to sensitive "problem areas." What emerged from the process described here, most agreed, was a data-based five year plan which was creative, far sighted, capable of implementation, consistent with the goals and systems of the state department structure and true to the letter and spirit of the federal mandate. However, the R and D Center had neither the information nor the right to determine the costs of implementation. It is not possible for the outside contractor to cost items out, to determine their cost effectiveness, or indeed to de-

termine who in the state agency shall be responsible for their operating. A tremendous amount of effort was devoted to providing a plan that was feasible. The effort was based upon the possibly erroneous assumption that a high likelihood existed for its implementation. Part of this "faith" resided in the belief that if an exemplary and workable plan was submitted, attempts would be made to put it into effect. It is significant for policy researchers to realize that such faith is probably misapplied in research such as this. Political, ethical and compliance factors may be the stronger determinants for implementation.